## References:-


[1] Abdel-Hafez, A. A., (2007), Benzimidazole condensed ring systems: New synthesis and antineoplastic activity of substituted 3,4-dihydro- and 1,2,3,4-tetrahydro-benzo [4,5]imidazo[1,2-a]pyrinnidine derivatives, *Archives of Pharmacal Research*, **30(6)**, 678-684.

[2] Abdelhamid, Abdou O.; Abdelall, Eman K. A.; Abdel-Riheem, Nadia A.; Ahmed, Sayed A., (2010), Synthesis and Antimicrobial Activity of Some New 5-Arylazothiazole, Pyrazolo[1,5-*a*] Pyrimidine, [1,2,4]Triazolo[4,3-*a*]Pyrimidine, and Pyrimido[1,2-*a*]Benzimidazole Derivatives Containing the Thiazole Moiety,*Phosphorus, Sulfur and Silicon and the Related Elements*, **185(4)**, 709-718.

[3] Abdelhamid, A. O.; Riad, B. Y.; Aziz, S. I. Fac. Sci., Cairo Univ., Giza Egypt, (1987), Reactions with 2-Aminobenzimidazole: Synthesis of Several New Pyrimido[1,2-*a*]benzimidazole Derivatives, *Archiv der Pharmazie*, **320(7)**, 642-6.

[4] Al-Schiekh, M. A.; El-Din, A. M. S.; Hafez, E. A.; Elnagdi, M. H, (2004)**,** α-Enones in Heterocyclic Synthesis. Part 1. Classical Synthetic and Environmentally Friendly Synthetic Approaches to Alkyl and Acyl Azoles and Azines. *J. Chem. Res.*, 174.

[5] Al-Zaydi, K. M.; Borik, R. M.; Elnagdi, (2003), 2-Arylhydrazonopropanals as Building Blocks in Heterocyclic Chemistry: Microwave Assisted Condensation of 2-Arylhydrazonopropanals with Amines and Active Methylene Reagents, *M. H. Molecules*, **8(12)**, 910.

[6] Anisimova, V. A.; Osipova, M. M.; Spasov, A. A.; Turchaeva, A. F.; Dudchenko, G. P.; Larionov, N. P.; Kovalev, S. G., (2002) , Synthesis and Pharmacological Activity of 1-N- and 10-N-Substituted 1(10),2,3,4-Tetrahydropyrimido-[1,2-a]benzimidazoles, *Pharmaceutical Chemistry Journal* **, 36(9)**, 468-473.

[7] Bayomi, S. M.; Amin, K. M.; Al-Obaid, A. M.; Hares, N. G., **(**1993), properties of some Nitrofuryl triazolo [3,4-b]-*1,3*,4-thiadiazines.,*Egyptian Journal of Pharmaceutical Sciences* **1993**, 34(1-3), 117-30.

[8] Beyer, C. F.; Zhang, N.; Hernandez, R.; Vitale, D.; Lucas, J.; Nguyen, T.; Discafani, C.; Ayral-Kaloustian, S.; Gibbons, (2008), TTI-237: a novel microtubule-active compound with in vivo antitumor activity., *J. J.Cancer Res*, **68(7)**, 2292.

[9] Central Euro. Jour. Publisher: Springer GmbH, CODEN: CEJCAZ ISSN: 1895-1066, (2009)**,** Heterocyclic chemistry, *Central European Journal of Chemistry* **7(3)**, 337-342.

[10] Chebanov, V. A.; Desenko, S. M.; Kuzmenko, S. A.; Borovskoy, V. A.; Musatov, V. I.; Sadchikova, Yu. V., (2004)**,** Reactions of 2 aryl 4 arylidene 4H oxazol 5 ones with 2 aminobenzimidazole, *Russian Chemical Bulletin*, **, 53(12)**, 2845-2849.

[11] Chen, C.; Lv, L.; Ji, F.; Chen, Q.; Xu, H.; Niu, C.; Xi, Z.; Yang, G., (2009)**,** Design and synthesis of N-2,6-difluorophenyl-5-methoxyl-1,2,4-triazolo[1,5-a]-pyrimidine-2-sulfonamide as acetohydroxyacid synthase inhibitor. *Bioorg Med Chem* **17,** 3011–3017.

[12] Chen, Q.; Zhu, X. L.; Liu, Z. M. et al., **(**2008)**,** Synthesis, Antifungal Activity and CoMFA Analysis of Novel 1,2,4-Triazolo[1,5-a]pyrimidine Derivatives., *Eur. J. Med. Chem.*, **43**, 595.

[13] Chen, Q.; Zhu, X.; Jiang, L.; Liu, Z.; Yang, G.,(2008), antifungal effect of triazolopyrimidine, *European Journal of Medicinal Chemistry*, 43, 595-603.

[14] Cheung, M.; Harris, P. A.; Hasegawa, M.; Ida, S.; Kano, K.; Nishigaki, N.; Sato, H.; Veal, J. M.; Washio, Y.; West, R. I.. **(**2008)**,** One-pot Three-component Solvent-free Synthesis of Benzo[4,5]imidazo[1,2-*a*]pyrimidine Derivatives Catalyzed by Sulfamic Acid, *Chinese Journal of Chemistry***, 26(11),** 2107–2111.

[15] Desenko, S.M. and Orlov, V.D., **(**1989), Imine-Enamine Tautomerism of 3,4-Dihydroazolopyrimidines, *Khim. Geterotsikl.Soedin.*, 1071-1081.

[16] Desenko, S.M., Orlov, V.D., Lipson, V.V., and Estrada,Kh., (1991)**,** Synthesis and Tautomerism of 1,4(3,4)-Dihydropyrimido(1,2-a) benzimidazoles, *Khim. Geterotsikl. Soedin.,* 1215-1219.

[17] Desenko, S. M.;Orlov, V. D. **(**1989)**,** significantly from the UV spectra of the heteroaromatic *compound Chem. Heterocycl. Compd.*, 8, 1071–1075.

[18] Desenko, S. M.; Gladkov, E. S.; Nenaidenko, V. G.; Shishkin, O. V.; Shishkina, S. V. **(**2004), Trifluoromethyl-Substituted Di- and Tetrahydroazolopyrimidines. Chem. *Heterocycl. Comp*., 40(1), 65-69.

[19] (a) Drews, J. Science (2000), Drug discovery: a historical perspective., **287**, 1960 (b) Wess, G.; Urmann M.; Sickenberger, B. Angew, (2001), Medicinal chemistry: challenges, *Chem. Int. Ed*., **40**, 3341.

[20] Ebasˇek, P. Cˇ; Bevk, D.; Pirc, S.; Stanovnik, B.; Svete, (2006), compounds recently prepared by the solid-phase and by the solution-phase parallel synthesis *J. J. Comb. Chem*., **8**, 95.

[21] Evans, B. E.; Rittle, K. E.; Bock, M. G.; Dipardo, R. M.; Freidinger, R. M.; Whitter, W. L.; Lundell, G. F.; Veber, D. F.; Anderson, P. S.; Chang, R. S. L.; Lotti, V. J.; Cerino, D. J.; Chen, T. B.; Kling, P. J.; Kunkel, K. A.; Springer, J. P.; Hirshfield, J (1988), Analogue-Based Drug Discovery. *J. Med. Chem.* **31**, 2235.

[22] Fairfield, B. J.; Andrew, C.; Allan, J., (2004), 1,5-Alpyrimidines and Their Use in Medicine, **41(08),** 136,.

[23] Fischer, G., (1993), 1,2,4-Triazolo[1,5-a]pyrimidine chemistry, *Adv. Heterocycl. Chem*. **57**, 81.

[24] Fischer, G., (2008) recent progress in 1,2,4-Triazolo[1,5-a]pyrimidine chemistry *Adv. Heterocycl. Chem.*, **95,** 143-219.

[25] Fraley M. E., Hoffman W. F., Rubino R. S. (2002), Synthesis and initial SAR studies of 3,6-disubstituted pyrazolo[1,5-a]pyrimidines: a new class of KDR kinase inhibitors. *Bioorg. Med. Chem. Lett*. **12(19)**, 2767.

[26] Goto, K.; Kokai J. T. K., **(**1992), JP 03,215,488; neurotropic pyrimido[1,2-a]benzimidazole *Chem. Abstr*., **116**, 128-96.

[27] Hammouda, M. H.; Etman, E.; M. Metwally, A, (1992), triazolo[1,5-*a*]pyrimidine, *J. Serb. Chem. Soc*., **57**, 165.

[28] Horton, D. A.; Bourne, G. T. (2003); 1,3,4-Thiadiazole as antimicrobial agent, *Smythe, M. L. Chem. Rev*., **103**, 893.

[29] Hammouda, M.; Metwally, M. A.; Abou-Zeid, Z. M.; Zimaity, T. **(**1993), 2-(Acetyl/cinnamoyl/dimethylaminopropionyl)indane-1,3-dione in the Synthesis of Heterocycles of Pharmaceutical Interest, *Indian J. Chem., Sect. B.*, **4**, 440–444.

[30] Hassaneen, H. M.; Abdallah, T. A.; Abdelhadi, H. A.; Hassaneen, H. M. E.; Pagni, R. M. (2003**),** Polyfunctional Fused Heterocyclic Compounds via Indene-1,3-diones, *Heteroat. Chem.*, **14**, 491.

[31] Havlicek, L.; Fuksova, K.; Krystof, V. et al. (2005), 8-Azapurines as new inhibitors of cyclin-dependent kinases., *Bioorg. Med. Chem*., **13**, 5399.

[32] Kanno, H.; Yamaguchi, H.; Ichikawa, Y.; Isoda S. (1991), A Reagent, Ethyl 2-(2-tert-Butyl-2H-tetrazol-5-yl)-3-(dimethylamino) acrylate (DMTE), for Facile Synthesis of 2,3-(Ring Fused)-5-(5- tetrazolyl)-4H-pyrimidin-4-one Derivatives., *Chem. Pharm. Bull.*, **39**, 1099-1105

[33] Kolbn H. C.; Finn, M. G.; Sharpless, K. B. Angew. **(**2001**),** Method for preparing organic/inorganichybrid functionalized solids having a triazole ring, *Chem. Int. Ed.*, **40**, 2004.

[34] Komykhov, S. A.; Ostras, K. S.; Kostanyan, A. R.; Desenko, Sergey M.; Orlov, V. D.; Meier, H., (2005), reaction of 2-amino benzimidazole with arylidene malanonitriles, *J. Het. Chem*.**, 42(6)**, 1111-1116.

[35] Krasovsky, A. L.; Moiseev, A. M.; Nenajdenko, V. G.; Balenkova, E. S., (2002), Fluorine Containing Triazolo- and Tetrazolopyrimidines *Synthesis*, **7**, 901-905.

[36] Kuznetsova, O. A.; Filyakova, V. I.; Pashkevich, K. I.; Ulomskii, E. N.; Plekhanov, P. V.; Rusinov, G. L.; Kodess, M. I.; Rusinov, V. L., (2003), Fluoroalkyl-containing lithium β-diketonates in the synthesis of 1,2,4-triazolo[1,5-a]pyrimidines *Russ. Chem. Bull. (Engl. Transl.)*, **1**, 52.

[37] Kreutzberger, A.; Leger, M. Inst. Pharm., Johannes Gutenberg-Univ. Mainz, Mainz, **(**1982), herbicidal pyrimido[1,2-a]benzimidazole ,. *Ger. Arch. Pharm.* (Weinheim, Germany), **315(5)**, 438-43.

[38] Kovigin, Y. A.; Shikhaliev, K. S.; Potapov, A. Y.; Krylsky, D. V. V. Gos., Univ., Russia Izvestiya Vysshikh Uchebnykh Zavedenii, (2005), reaction of 2-aminobenzimidazole with diethyl benzylidenemalonate, *Khimiya Khimicheskaya Tekhnologiya*, **48(1)**, 59-60.

[39] Kreutzberger, A.; Leger, M. J. **(**1981), 1,4-Dihydropyrimido[1,2-a]benzimidazoles and their biological activity, *Heterocycl. Chem.*, **8**,1587-1588.

[40] Kreutzberger A; Leger M, (1982), Synthesis and anesthetic activity of pyrimido[1,2-a]benzimidazole-2,4-diones , *Archiv der Pharmazie*, **315(7)**, 651-3.

[41] Lipson, V.V., Desenko, S.M., Orlov, V.D., Ryndina, E.N., Chuvurin, A.V., Gorbenko, N.I., and Kirichenko, A.A., (1994), 1,4-Dihydropyrimido[1,2-a]benzimidazoles and their biological activity, *Khim.-Farm. Zh.,* **28**, 14.

[42] Lipson, V. V.; Karnozhitskaya, T. M.; Desenko, S. M.; Shishkina, S. V.; Shishkin, O. E.; Musatov, V. I. **(**2007), Reactions *of* α-Aminoazoles with Diethyl Benzylidenemalonate.*, Russ. J. Org. Chem*., **43(2)**, 249-255.

[43] Lipson, V. V.; Orlov, V. D.; Desenko, S. M.; Shishkina, S. V.; Shishkin, O. V.; Shirobokova, M. G., **(**2000**),** 1,2,3,4-Tetrahydropyrimido[1,2-a]benzimidazol-2- and -4-Ones Chem., *Heterocycl. Comp.*, **36(9)**, 1039-1043.

[44] Li, H.; Tatlock, J.; Linton, A.; Gonzalez, J.; Jewell, T.; Patel, L.; Ludlum, S.; Drowns, M.; Rahavendran, S. V.; Skor, H.; Hunter, R.; Shi, S. T.; Herlihy, K. J.; Parge, H.; Hickey, M.; Yu, X.; Chau, F.; Nonomiya, J.; Lewis, (2009), discovery of R-6-cyclopentyl-6-(2-(2,6diethylpyridine-4-yl), *C. J. Med. Chem.*, **52**, 1255.

[45] Lipunova, G. N.; Nosova, E. V.; Kodess, M. I.; Charushin, V. N.; Rozin, Y. A.; Chasovskikh, O. M. **,** (2001), Fluorine-Containing Heterocycles: XII. Fluorine-Containing Quinazolin-4-ones and Azolo[*a*]quinazolinone Derivatives,. *Russ. J. Org. Chem. (Engl. Transl*.), **37**, 570.

[46] Liekfeld, (1994), 2-aminobenzimidazole with 3-(dimethylamino)-2-(phenylsulfonyl) acrylonitrile furnishing pyrimido [1,2-*a*] benzimidazole, *H. Pharmazeut. Ztg.*, **139**, 34.

[47] Lombardino, J. G.; Lowe III, (2004), A guide to drug discovery: The role of the medicinal chemist in drug discovery — then and now, *J. A. Nat. Rev. Drug Discov*., **3**, 853.

[48] Martin, M. W.; Newcomb, J.; Nunes, J. J.; Boucher, C.; Chai, L.; Epstein, L. F.; Faust, T.; Flores, S.; Gallant, P.; Gore, A.; Gu, Y.; Hsieh, F.; Huang, X.; Kim, J. L.; Middleton, S.; Morgenstern, K.; Oliveira-dos-Santos, A.; Patel, V. F.; Powers, D.; Rose, P.; Tudor, Y.; Turci, S. M.; Welcher, A. A.; Zack, D.; Zhao, H., (2008), Structure-based design of novel 2-amino-6-phenyl-pyrimido[5',4':5,6]pyrimido[1,2-a]benzimidazol-5(6H)-ones as potent and orally active inhibitors of lymphocyte specific kinase (Lck): synthesis, SAR, and in vivo anti-inflammatory activity., *Jour. Med. Chem*. **51(6)**, 1637-1648.

[49] Nawrocka, W. P.; Sztuba, B.; Drys, A.; Wietrzyk, J.; Kosendiak, J.; Opolski, A. (2006), reaction of aromatic aldehydes with *2*-aminobenzimidazole by using catalytic amount of M(NO3)*2* .xH2 O, *Polish Journal of Chemistry* , **80(2)**, 279-287.

[50] Nawrocka, W.; Zimecki, M. (1998), ChemInform Abstract: Synthesis and Immunotropic Activity of Some 2-Aminobenzimidazoles. Part 4., *Arch. Pharm.*, **331(7-8)**, 249-253.

[51] Nofal, Z. M.; Fahmy, H. H.; Mohamed, H. S. (2002), Synthesis, antimicrobial and molluscicidal activities of new benzimidazole derivatives., *Arch. Pharm. Res.*, **25(1)**, 28-38.

[52] Nunes, J. J.; Zhu, X. T.; Amouzegh, P.; Ghiron, C.; Johnston, D. N.; Power, E. C. WO 2005009443, (2005), protein kinase inhibiter pyrimido[1,2-*a*]benzimidazoles *Chem. Abstr.*, **142**, 198088.

[53] Nunes, J. J.; Zhu, X. T.; Ermann, M.; Ghiron, C.; Johnston, D. N.; Saluste, C. G. P. WO 2005021551, (2005) , T cell activation property of pyrimido[1,2-*a*]benzimidazoles *Chem. Abstr*., **142**, 298123.

[54] Orlov, V. D.; Desenko, S. M.; Kruglenko, V. P.; Gnidets,V. P.; Klyuev, N. A.; Povstyanoi, M. V. (1986), heterocyclic chemistry, *Khim. Geterotsikl.Soedin.* ,**8**, 1136–1137.

[55] Pelaez, W.; Gafarova, I. T.; Yranzo, G. I. **(**2003**),** Flash vacuum pyrolysis of azolyl-malonamates. Synthesis of 5-hydroxy-azolopyrimidin-7-ones, *ARKIVOC*, **10**, 262.

[56] Peng, H.; Kumaravel, G.; Yao, G.; Sha, L.; Wang, J.; Van Vlijmen, H.; Bohnert, T.; Huang, C.; Vu, C. B.; Ensinger, C. L.; Chang, H.; Engber, T. M.; Whalley, E. T.; Petter, R. C., (2004), heterocyclic chemistry, *J. Med. Chem*., **47**, 6218.

[57] Ram, V.; Srivastava, P.; Singh, S. K.; Kandpal, M.; Tekwani, B. L. Bioorg, (1997), ChemInform Abstract: Functionalized Azoles and Triazolo(1,5-a)pyrimidines as Latent Leishmanicides,. *Med. Chem. Lett.*, **7**, 1087.

[58] Richardson, C. M.; Williamson, D. S.; Parratt, M. J.; Borgognoni, J.; Cansfield, A. D.; Dokurno, P.; Francis, G. L.; Howes, R.; Moore, J. D.; Murray, J. B.; Robertson, A.; Surgenor, A. E.; Torrance, C. J., (2006), heterocyclic compound, *Bioorg. Med. Chem. Lett.*, **16**, 1353.

[59] Shaaban, M. R.; Saleh, T. S.; Mayhoub, A. S.; Mansour, A.; Farag, A. M. (2008), Synthesis and analgesic/anti-inflammatory evaluation of fused heterocyclic ring systems incorporating phenylsulfonyl moiety., *Bioorg. Med. Chem*., **16**, 6344.

[60] Shaban, M.A.E.; Morgan, A.E.A., (2000), Triazolo(1,5-a)pyrimidines, *Adv. Heterocycl. Chem*., **77**, 345.

[61] Shaban, M.A.E.; Morgan, A.E.A., (2000), spectroscopic characterization and crystallographic studies of 1,2,4-triazolo[1,5-*c*]pyrimidines, *Adv. Heterocycl. Chem.* , **73**, 131.

[62] Shaban, M.A.E.; Morgan, A.E.A., (2000), spectroscopic characterization and crystallographic studies of 1,2,4-triazolo[4,3-*a*]pyrimidines, *Adv. Heterocycl. Chem.* , **75**, 243.

[63] Shaabani, M. R., (2008), spectroscopic characterization and crystallographic studies of 1,2,4-triazolo[4,3-*c*]pyrimidines, *Heterocycles,* **75(12)**, 3005-3014.

[64] Shaabani, M. R., (2008), Triazolo(1,5-a)pyrimidines, *Heterocycles,* **75(12)**3005-3014.

[65] Srivastava, R. P.; Singh, S. K.; Abuzar, S.; Sharma, S.; Gupta, S.; Katiyar, J. C.; Chatterjee, R. K, ,(1993), substance P receptor binding activity *Indian J. Chem., Sect. B.*, **32B(10)**, 1035-44.

[66] Sondhi, S. M.; Rajvanshi, S.; Johar, M.; Bharti, N.; Azam, A.; Singh, A. K., **2002**, central nervous system-depressing, Eur. *J. Med. Chem.* **37(10)**, 835-843.

[67] Sondhi, S. M.; Magan, A.; Sahu, R.; Mahesh, V. K.; Shukla, R.; Patnaik, G. K. **(**1994),heterocyclic chemistry, *Synthesis* , 1**1**, 1175-80.

[68] Su, J.; Ye, C.; Zheng, N., (2004), studies of 1,2,4-triazolo[4,3-*c*]pyrimidines, *CP* , **15(37),** *853*,.

[69] Trapani, G.; Franco, M.; Latrofa, A.; Genchi, G.; Iacobazzi, V.; Ghiani, C. A.; Maciocco, E.; Liso, G. Eur. **(**1997), Synthesis and Benzodiazepine Receptor Binding of Some Imidazo-, Pyrimido(2,1-b)benzoxazoles and Pyrimido(1,2-a)benzimidazoles. *J. Med. Chem*. **32(1)**, 83-89.

[70] Tseng, S. S.; Epstein, J. W.; Brabander, H. J.; Francisco,G. (1987), α,β-unsaturated ketones, *J. Heterocycl. Chem*,. **3**, 837–843.

[71] Uryu, S.; Tokuhiro, S.; Murasugi, T. et al. (2002), Synthesis and Antiproliferative Activity of Novel [1,2,4]Triazolo[1,5-a]pyrimidine-7-amine Derivatives, *Brain Research.,* **946**, 298.

[72] Venepalli, B. R.; Aimone, L. D.; Appell, K. C.; Bell, M. R.;Dority, J. A.; Goswami, R.; Hall, P. L.; Kumar, V.; Lawrence,K. B. **(**1992), Synthesis and substance P receptor binding activity of androstano[3,2-b]pyrimido[1,2-a]benzimidazoles., *Jour. Med. Chem.*, **2**, 374-378

[73] Wahe, H.; Asobo, P. F.; Cherkasov, R. A.; Nkengfack, A. E.; Folefoc, G. N.; Fomum, Z. T.; Doepp, D., **(**2003), Facile Synthesis of 1-Amino[1,3,5]triazino[1,2a]-benzimidazolo-2-one and Pyrimidino[1,2a]benzimidazolo-4-one Derivatives *Arkivoc (Gainesville, FL, United States)*, **14**, 170-177.

[74] Werbel, L. M.; Curry, A.; Elslager, E. F.; Hess, C. A.; Hutt, M. P. Youngstrom, C., (1969), antimalerial activity of pyrimido[1,2-*a*]benzimidazoles *Journal of Heterocyclic Chemistry*, **6(6)**, 787-96.

[75] White, A. C.; Black, R. M.; U. S. 3,989,709, 1997; (1977),antidiabetics heterocyclic compound, *Chem. Abstr.*, **86**, 726-94.

[76] Yamashkin, S. A.; Kucherenko, N. Y.; Yurovskaya, M. A. **(**1997**),** ChemInform Abstract: Reactions of Acetoacetic Ester with Aryl- and Heteroarylamines *Chem. Heterocycl. Compd. (Engl. Transl.)*, **33**, 499.

[77] Xin, Z.; Cun-long, Z.; Lei, H.; Qi, L.; Jiu-liang, W.; Xiao-li, S.; Ping, G., (2009), pyrimido-[1,2a]benzimidazoles, *Chem. Res. Chinese Universities*, **25**, 474.

[78] Zanatta, N.; Amaral, S. S.; Esteves-Souza, A.; Echevarria, A.; Brondani, P. B.; Flores, D. C.; Bonacorso, H. G.; Flores, A. F. C.; Martins, M. A. P. **(**2006), synthesis and characterization of some novel 2-(trifluoromethyl)pyrimido-[1,2a]benzimidazoles and pyrimido[1,2a]benzimidazoles-2H-ones of biological interest, *Synthesis*, **14**, 2305-2312.

[79] Zun-Ting Zhang*, Yong Liang, Yu-Qing Ma, Dong Xue and Jun-Ling Yang, **(**2010), One-Step Synthesis of Diarylpyrazolo[3,4-*b*]pyridines from Isoflavones, *J. Comb. Chem.*, , ***12*** **(4)**, pp 600–603

[80] Zhuang, Q.; Li, C.; Tu, S.; Cao, L.; Zhou, D.; Shao, Qi.; Guo, C. **2008**, reaction of 2-aminobenzimidazole with 4-arylidene-2-phenyloxazol-5(4H)-one in glycol, *Jour. Heterocycl. Chem*, **45(5)**, 1299-1303.